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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/790,859

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Hiromi Saitoh

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01/24/2006

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EXAMINER

VU, PHU

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,859

Applicant(s)

SAITOH ET AL.

Examiner

Phu Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/9/05, 3/3/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

Applicant's arguments regarding claims 6-11 have been fully considered but they are not persuasive. Regarding claims 6-11, applicant states that it would not have been a prima facie case of obviousness in view of Konuma and Menard contending that the heat sink in Konuma is used to only cool exhaust air. However, this is irrelevant as the rejection was made on the basis that some projector housings provide asymmetrical cooling and the proximity to the heat sink/exhaust would provide an imbalance in temperature in the system. Addition of an additional heat sink would appear to provide additional cooling and furthermore this does not exclude adding additional exhaust or other cooling mechanisms as the claim merely states a second case different from the first. The rejection provides motivation to change the layout of one such particular case at the expense of an additional heat sink.

Applicant's arguments with respect to claims 1-5 and 12-13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, 2, 5, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashizume et al US Patent No. 6375328 in view of Dinh US Patent No. 6891104 in view of Miyahara US 643299 and Barsun US 6659168.

Regarding claims 1 and 2 and 13, Hashizume discloses a cased electro-optical apparatus comprising, an electro-optical unit (fig. 10 element 925R) that receives light into an image display area from a light source, and a case that contains the electro-optical unit the case including a plate (54) opposing a surface of the electro-optical unit and a cover (53) that covers the electro-optical unit, at least one of the plate and the cover supporting at least a portion of a periphery of the image display area of the electro-optical unit. The reference fails to disclose one of the plate and the cover being selected from a plurality of ones having different shapes and surface areas and each of the plurality of different ones being attachable to one another however Dinh discloses an electrical box cover with a plate portion (fig. 2 element 100) and a plurality of interchangeable covers with different shapes and surface area (figs 2, 6 and 7) to accommodate different styles of plugs. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use one of a plurality of different style covers to accommodate/fit different electro-optical apparatuses. The references do not teach using different heat dissipating structures however, Barsun teaches a heatsink that teaches multiple fin types that dissipates that can dissipate heat from multiple types of components with respective fin type that is most cost effective for each respective component (see abstract). Miyahara teaches a heat sink that produces a high-heat radiating effect even when space saving measures must be taken (see

abstract). Each heatsink can be applied to the case depending on what is needed which is performance/minimal space or cost effectiveness/rigidity. Therefore, at the time of the invention it would have been obvious to one ordinary skill in the art to apply either structure to a case in order to gain their respective benefits. Combining the case with either reference Miyahara or Barsun do not suggest a change to the opening for the image display area of the electro-optical component since a heatsink is never applied to this area.

Regarding claim 5, Hashizume discloses case, comprising: a plate (fig. 10 element 54) opposing a surface of an electro-optical unit (925R) that receives light into an image display area from a light source; and a cover that covers the electro-optical unit (53); the case containing the electro-optical unit by supporting at least a portion of a periphery of the image display area of the electro-optical unit by at least one of the plate and the cover. The reference fails to disclose one of the plate and the cover be selected from a plurality of ones having different shapes; and each of the plurality of ones being attachable to the other, however Dinh discloses an electrical box cover with a plate portion (fig. 2 element 100) and a plurality of interchangeable covers with different shapes (figs 2, 6 and 7) to accommodate different styles of plugs. Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use one of a plurality of different style covers to accommodate/fit different electro-optical apparatuses. The references do not teach using different heat dissipating structures however, Barsun teaches a heatsink that teaches multiple fin types that dissipates that can dissipate heat from multiple types of components with respective fin

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type that is most cost effective for each respective component (see abstract). Miyahara teaches a heat sink that produces a high-heat radiating effect even when space saving measures must be taken (see abstract). Each heatsink can be applied to the case depending on what is needed which is performance/minimal space or cost effectiveness/rigidity. Therefore, at the time of the invention it would have been obvious to one ordinary skill in the art to apply either structure to a case in order to gain their respective benefits. Combining the case with either reference Miyahara or Barsun do not suggest a change to the opening for the image display area of the electro-optical component since a heatsink is never applied to this area.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashizume et al US Patent No. 6375328 in view of Dinh US Patent No. 6891104 in view of Miyahara US 643299 in view of Barsun US 6659168 and further in view of Menard US Patent No. 6741354.

Regarding claims 3 and 4, Hashizume and Dinh fail to disclose the plates and the cover having a surface area increasing portion that increases the surface area, the plates and covers having a different shape corresponding to a different surface area increased by the surface area increasing portion and the plates and the covers having different shapes corresponding to whether or not the plates or the covers each have a surface area increasing portion. However Menard discloses a surface area increasing portion (heat sink fig. 5 element 38) affixed to an electro-optical cased apparatus to improve heat dissipation. Dinh, as previously disclosed showed that various interchangeable covers could be used to suit the shape of the electro-optical apparatus.

In view of Menard various covers and plates could be used depending on the amount of heat dissipation required by the electro-optical apparatus and space constraints.

Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use different combinations of interchangeable lids and covers to provide various amount of heat dissipation or size depending on what is needed.

Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashizume et al US Patent No. 6375328 further in of Konuma US Patent No. 6290360 and further in view of Menard US Patent No. 6731354.

Regarding claims 6 and 11, the reference teaches projection display apparatus, comprising: a light source (fig. 5A element 81), a plurality of electro-optical units that receive light from the light source (fig. 5A elements 925G, 925B and 925R), an optical system that guides the light to the electro-optical units (952, 972, 961, 942, 943, 931); a projection optical system that projects light emitted from the electro-optical units; The reference shows a case that contains one of the electro-optical units (fig. 10 elements 53-55) however the references fail to disclose a first case that contains at least one of the electro-optical units; and a second case having a different shape compared to the first case that contains at least one of the electro-optical units not contained in the first case. Konuma discloses a heatsink (fig. 6 element 66) placed to one side of the projection unit to reduce to cool the liquid crystal display panels. However, it can be seen that this heatsink is situated farther from liquid crystal panel 14 than the others which corresponds to one of the lighting components. Menard discloses a surface area increasing portion (heat sink fig. 5 element 38) affixed to an electro-optical cased

apparatus to improve heat dissipation. Therefore, it would be obvious to one of ordinary skill in the art to add surface area increasing portions to the cover or plate (first case) of the electro-optical element farthest from the heat-sink since this display would run hotter than the other electro-optical elements and thus results in a first case corresponding to one light component and the second corresponding to the remaining light components.

Regarding claim 7, the primary reference shows a cases of the electro-optical unit having a cover and plate that cover the electro-optical unit (see claim 1 rejection) and the limitation of the first and second cases having a different shape was rejected in the independent claim (see claim 6 rejection).

Regarding claim 8, the combined references taught placement of a heatsink on the first case therefore it has a larger surface area than the second case (see claim 6 rejection).

Regarding claims 9 and 10, the references show various covers and plates could be used depending on the amount of heat dissipation required by the electro-optical apparatus and space constraints. The references also show an uneven cooling system found in the projector. Menard has shown that increasing the surface area of cased portions (see claim 6 rejection) can result in the dissipation of more heat, however it requires the formation of fins. Therefore the combinations of a first case with third cover having larger surface area increasing portion that covers one electro-optical light than a second case with fourth cover, which has a smaller surface area increasing portion or a combination of a first case with fifth surface area increasing portion and a

second case with no surface area increasing portion are obvious because increasing the surface area increases heat dissipation, and reducing conserves space.

Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashizume et al US Patent No. 6375328 further in view of Menard US Patent No. 6731354 and further in view of Konuma US Patent No. 6290360 and further in view of Furuhata et al US Publication No. 2002/0060779.

Regarding claim 12, the references teach the independent light components being red, green, and blue however the references fail to teach the first case corresponding to blue and second case corresponding to green and red, with the surface area of the first case being larger than the surface area of the second case. However, Furuhata discloses that in a projector the amount of heat generated by a blue light is very large compared to that generated by the other lighting elements (see [0013]). Menard as previously discussed (see claim 6 rejection) discloses a surface area increasing portion (heat sink fig. 5 element 38) affixed to an electro-optical cased apparatus to improve heat dissipation. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to increase the surface area of the case corresponding to the blue electro-optical element because it generates more heat than other elements.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu Vu whose telephone number is (571)-272-1562. The examiner can normally be reached on 8AM-5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu Vu
Examiner
AU 2871


ANDREW SCHECHTER
PRIMARY EXAMINER